

AVIATION

The Oldest American Aeronautical Magazine

AUGUST 22, 1927

Issued Weekly

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The Spokane, Wash., airport where the National Air Races are to be held Sept. 23, 24

VOLUME
XXIII

SPECIAL FEATURES

NUMBER
8

THE LOCKHEED "VEGA" COMMERCIAL PLANE
DESCRIPTIONS OF THE DOLE DERBY PLANES
GERMAN AIRMEN ESTABLISH ENDURANCE RECORD

AVIATION PUBLISHING CORPORATION

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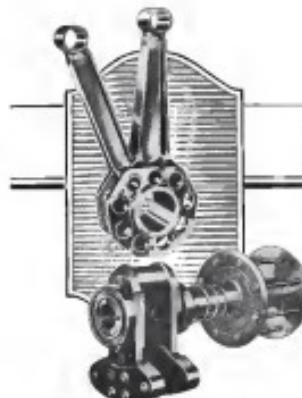


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1925

World's altitude record of 25,000 feet, by Calles, flying a Blériot-Spadi, with 450 H. P. engines.

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This Spray Throwing Business....

It's something to think about... For years now it's popular has been out of use as prime for helping a crop of winter throwers to keep early-designed flax. And now Fairchild engineers have developed a float bottom that allows no spray. The unique V-bottom is so designed that it can be used longer than the ordinary V-bottom. In rough water the sharp V at the head keeps the check and allows only a small amount of spray.

The Fairchild flax are of complete construction. With their dashboards covering over a hundred wood frames, they enjoy the advantages of all wood frames as well as checking two important factors which eliminate the difficulties found in efficient items of making a revised semi-permanently waterproof.

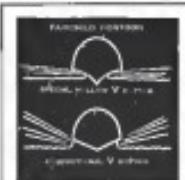
The boats in Fairchild flax are sealed by one of a tape impregnated with a special waterproof seal and containing the glue. By clamping this tape between the metal rivets

and the wood frame with distance holes, a flexible joint is obtained which stays watertight in any climate.

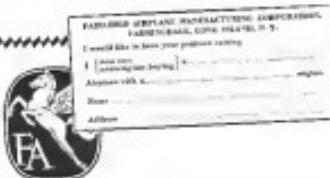
In the sea as in the water, Fairchild boats are semi-hydrodynamic designs, offer the maximum speed and maneuverability. The tails are streamlined instead of being squared off, and planes equipped with these floats have a surprisingly high speed. The tail can be easily removed to form a durable-looking boat having curves treated with Epoxy. This bumper never serves to protect the boat from damage and can be replaced.

Flax are now in production and ready for delivery for airplanes of 2200 to 4000 lb gross weight. Other sizes are being developed.

Meet our Director Fairchild Aircraft Manufacturing Corporation, subsidiary of Fairchild Aeronautic Corporation, Farmingdale, Long Island, N. Y.



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No. 3

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With the Editors

By the time these few lines are being read the Dole Derby, from the municipal airport of Oakland, Calif., in the Hawaiian Islands, will be anacronstic history and the \$100,000 in prizes will have been won and lost. As the hour set for the start of the air race approaches nine planes with their pilots and navigators are ready to speed down the 7,000 ft. runway and take the race. None of Aug. 22, the original date of the start, found only two planes qualified to leave. By natural causes the start was postponed four days, and during that space of time the other entries qualified.

On page 414 of this issue of AVIATION is to be found descriptions of the various planes entered in the Dole Derby, including descriptions of those that met with disaster while undergoing test flights. The majority of the entries are monoplanes with fixed undercarriages and are powered with single Wright Whirlwind engines.

CONSISTENCY!

The Lindbergh, Chamberlin, Maitland and Byrd flights had one common factor—the Wright Whirlwind Engine.

The consistent selection of this engine by these world-famous fliers—as well as by many others whose page in history is not yet written—is equalled only by the flawless operation of the engine, whose uniform performance had played a major part in these epochal events.

This choice was not haphazard. It was logically based upon the actual performance of the engine itself. Its record of over 4,635,000 miles flown during 1926, in civil and military service, is alone sufficient to justify universal confidence.

Send for Bulletin 17R.



W R I G H T
AERONAUTICAL CORPORATION
Paterson, N. J., U. S. A.

AVIATION

The Oldest American Aeronautical Magazine

Vol. XXIII

AUGUST 22, 1927

No. 8

A Letter That Agrees

To the Editor:

I have read your very interesting editorial, "Perplexing the Buyer," and I heartily agree with the sentiment expressed.

It is very true that should the purchasers want that planes receive a standard test that would quickly solve the problem but it seems to me it will be a long time before this is practical or possible and furthermore I believe the manufacturers should take the initiative in all excellent selling policy.

If a number of manufacturers of commercial airplanes get together and agreed that such new types should have a standard test before an unprepared buyer, it would perfectly do the other manufacturers to take similar steps before the public would recognize their advertising performance.

The logical organization for handling such tests would be the Department of Commerce. The Department has a number of inspectors who are located throughout the country so the manufacturer on the west coast could call on one or perhaps several as those in the interior or on the east coast, and it would not be an extremely difficult matter to draw up a standard set of tests which could be circulated at the time the type certificates on the ship were granted. This could be done without a great deal of expense and without greatly overburdening the Department of Commerce.

Of course the buyer is already protected to a much greater extent than ever before. But, however, to protect him and as the older ones have to be licensed under the Department and the purchaser knows that the ship is at least airworthy. Accurate performance data seems to be the next step and I believe your magazine is taking a good example in presenting some solution of this difficult problem.

C. B. Jones
Curfiss Flying Service, Inc.

One That Disagrees

To the Editor:

In reference to the editorial "Perplexing the Buyer," that appeared in the Aug. 1, issue of *Aviation*, I do not agree that nothing as important as this article indicates. Performance (speed and climb) is not at all the only consideration involved in purchasing an aircraft. The qualities which may be grouped together under the word "Serviceability" are much more important commercially and cannot be determined by "field testing." Very often, after all sorts of wonderful performance test results of a new type of ship, all sorts of

additions and changes subsequently found necessary to make it serviceable for the use to which it is put, completely invalidate the original performance data. Performance data, even made under uniform conditions by the same establishment, will not help the prospective buyer to discriminate between different types of ships as there is no guarantee for giving into the market as required. Also the difference in equipment, specified or installed by different buyers, on the same type of ship, makes it impossible to arrive at a "standard performance." Performance tests made by a concern authorized to do so, "unbiased," unassisted and not fully equipped with an "engineer," would be just as useful for the "perplexed buyer" as the present system of test with some manufacturers of publishing dead traps or equally accurate calculations results. Of course, I sympathize thoroughly with the thoughts expressed in the article, but am afraid the results in practice would not be those hoped for.

Robert Northern
Atmospheric Aircraft Corp.

Passenger Carrying at Night

THE SEARCH for a new aviation is the buzz which develops most of the "joy flying" business at various flying fields. Although a few passengers went to popular fields and whatever they turn enough to the slightly heavier had the new sensation not intended and will probably continue to do so. On a recent visit to Blailey Field a new idea was suggested which should considerably increase the number of passengers who repeat their ride.

Blailey Field is the point of departure for the night air mail to Chicago and also the northern terminus of the Colonial Airline. Every night the arrival and departure of these planes and the illumination of the field draws a large crowd of spectators and sightseers. As the field is well lighted it has been decided to carry passengers at night for short flights and the experiment is now which is worth watching.

There are many reasons why night "joy flying" should prove a valuable addition to aviation. The first is the novelty of the pastime. People who have tired of riding in the day time would certainly be disposed to trying a night flight. Then again especially in smaller towns there is little to be done in the evenings and crowds comparable to those visiting fields on Saturday and Sunday should be available. Lastly the air at night is infinitely much smoother in the day time which would be an inducement to more passengers.

Descriptions of the Dole Derby Planes

**Majority of Entries Are Monoplanes With Landing Gears
And Are Powered With Single Wright Whirlwind Engines**

A STUDY OF the planes entered in the Dole Derby gives good indication that the fliers have been hard at work.

The trend in American design for long-distance flights seems to favor a single-seated monoplane with a high-wing set at the top of the fuselage. Every entry in the race is a land plane though some have sea worthy floatages and deckless landing gear. It is interesting to note that the first five entries in the field were built by men who were only an engineering achievement in name receive a great many entries.

None of the planes in the Derby are standard production models specially equipped and fitted for the long flight. The others were designed and constructed specifically for the race. Among them was the most unusual plane in the race, the Bessie, monoplane, which can fly and during a landing will sit upright with its front wheels off the ground. It is famous and is an art rugged tail structure. Again, in a scarcely more recent year in this country when numerous planes have been gathered, the Wright Whirlwind engine predominated.

The Bessie entry was the only plane entered in the Derby which was not powered by a Wright Whirlwind engine.

From the first, the only engine used in the Derby was the

against needful. The landing gear is disengaged in an emergency by pulling a lever in the cockpit. It is claimed that the Vega could stay ashore as long as the plane held together. In such case the large rubber-cloth patches was included by measuring a panel of the wing on the lower surface. This panel was cut out and the wing was then reassembled, held together with only sufficient strength to hold the plane until the patches were reengaged by taking a number of compressed carbon dioxide. By a special nozzle, designed by John K. Northrop, chief engineer for the Lockheed company, 80 per



In the foreground is the Bessie Wed monoplane in which Major Loring Pitt flew alone over 100 miles in the Grand Air race of Goffs and Stanley, and is the lastest in the first aviation race. See Details.

PRACTICE WHAT YOU PREACH — USE THE AIR MAIL.



Terry Air plane "Wheeler". Photo: Author. C. Cooley, engineer.
Lott W. D. Smith U.S.N.

against needful. The landing gear is disengaged in an emergency by pulling a lever in the cockpit. It is claimed that the Vega could stay ashore as long as the plane held together. In such case the large rubber-cloth patches were included by measuring a panel of the wing on the lower surface. This panel was cut out and the wing was then reassembled, held together with only sufficient strength to hold the plane until the patches were reengaged by taking a number of compressed carbon dioxide. By a special nozzle, designed by John K. Northrop, chief engineer for the Lockheed company, 80 per

cent of the fuel will be wasted in when lifting the bags with car by hand.

In the event of a forced landing the bags on the wing and body can be released in less than a minute. An auxiliary hand pump is carried to keep the pressure up after the valve handle should have been used up.

The wing flaps are more than

enough to bear the weight of the engine. Together with the gas tanks, which are packed with decompressed air, the wings are capable of carrying 1,200 lbs. of fuel, sufficient to

lose 1000 lbs. This is nearly twice the weight of the plane, fully loaded, at the take off.

For the long flight there are two 90 gal. tanks on the wings

in addition to two 100 gal. tanks in the fuselage between the pilot and navigator. The navigator's compartment is as follows:

In the front, a curved observation window, three seats

and a table, and a compass, all stowed in a low chest of drawers.

Above the navigator's head is a hatch for observation.

There are side windows to provide plenty of light. The plane

was equipped with both a transceiving and receiving apparatus.

Salmon Lake Flying Boat

An excellent plane of home-building is that designed for

Lloyd Norman A. Goldfarb, D.O.K.H., and Louis E. Hawkin.

It is a closed cabin monoplane with extremely compact wings and powered by a Wright Whirlwind engine.

"E-2" (Eustachian) — The Eustachian, as it was named, has exceptionally fine lines and it is claimed that the first flight of the plane was performed after that of the Pacific salmon.

With nearly 160 cubic-inches of the salmon, from many points of view, Goldfarb set to work and produced his first monoplane.

First powered out to work and performed his first monoplane.

The plane is 25 ft. 6 in. long, 16 ft. 6 in. wide, and 7 ft. 6 in. high.

It has a 100 hp. Hispano-Suiza engine, and is claimed

that it takes care of the necessary extra weight for the date

date it would power the plane with a 220 hp. Wright JBC Whirlwind.

Both pilot and navigator—Goldfarb and Hawkins—identify

not much. These sets of tanks hold the 280 gal. each in the wings, and 100 gal. in the fuselage and the 100 gal. tank in the rear part of the fuselage holds the same.

This is a novel method of fuel placement, but

permits an even distribution of the load.

Eustachian is fitted with dual control, the navigator's stick being placed slightly forward to be out of the way unless

necessarily required to do so. The altitude pointer of the radio compass is located in the rear of the fuselage, just in front of the rear tank.

This was written, but with his plane now at Los Angeles, Hawkin

has not had time to finish his notes.

He has, however, written a short article on the

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German Airmen Establish a New World's Endurance Flight Record

Edzard and Ristits Keep Junkers J-33-L Plane in Air for 52 Hr. 53 Min. 11 Sec.

THE ENDURANCE flight record held by Charles D. Edzard and Helmut Ristits was broken last week in Berlin when two German airmen, Captain Edzard and Helmut Kretsch, piloted a Junkers J-33-L plane, glided to earth at 5:00 a.m., after remaining in the air for 52 hr. 53 min. 11 sec. Their length of time in the air was 1 hr. 12 min. 56 sec. longer than that of the former record holders.

Edzard and Ristits took off at 5:46 A.M. (Berlin time) on Wednesday Aug. 8, 1937, from Tempelhof Field, Berlin, and landed at 5:00:11 A.M. 53 hr. 53 min. later. During the several hours the pilots expected that they were having trouble with the gasoline pump, and it was feared that they would be forced to land. But by the time daylight came the difficulty had been corrected and news was signaled to those waiting on the ground that all was in order and practically no fuel had still available.

A few hours before the plane was eventually landed all the employees of the Junkers works were allowed to assemble on the field. When a signal from the firm announced that they were landing, a small orchestra, many thousands, rallied toward the plane runway. An aide with Professor Junkers, chairman of the plane, the President of the State of Anhalt, of which Berlin is the capital, and other officials, organized the crowd and carried them off the field and cheered to their shoulders and carried them off the field and cheered and the singing of the German national anthem.

An All-Dreamland Meetsplane

The Junkers J-33-L is an all-dreamland monoplane with enclosed tapering cantilever wings set at the bottom of the fuselage with a large dihedral. The power plant is a Junkers L 5 280-312, 500 h.p. engine mounted at the front of the fuselage. Four adjustable seats for passengers are arranged having a center line located above the wing, with the steps arranged so that as little as possible.

This plane was originally constructed as a freight or mail carrier. The pilot sits directly behind the engine, and the rear, or rougher compartment, is 100 cu. ft. in size, and the pilot's cockpit occupies the front portion of the rear compartment which can be used as a repair shop, supply work or for throwing off of mailbags. The fuselage is constructed entirely of duralumin covered with a corrugated sheet metal skin.

The wings and tail are externally braced, constructed entirely of duralumin with inferior spans and strengthened by internal longitudinal struts, and are covered with corrugated aluminum sheeting.

The Junkers L 5 engine develops 318 hp. at 3,500 rpm. It is a six cylinder in-line water cooled engine weighing 665 lb. without propeller, less water, oil, or exhaust manifold. It has a bore and stroke of .63 x by 7.5 in.

The general specifications of the Junkers J-33-L are:

| | |
|---|-------------------------------|
| Span | 46 ft. 6 in. |
| Length | 32 ft. 6 in. |
| Height | 10 ft. 6 in. |
| Weight empty | 2,543 lb. |
| Normal weight load | 3,369 lb. |
| Normal weight loaded | 4,079 lb. |
| Armament | 600 gal. fuel and 20 gal. oil |
| Weight for flight | 4,079 lb. |
| Area of wing | 200 sq. ft. |
| Ground speed | 123 mph. |
| Cruising speed | 67 mph. |
| Landing speed | 53 mph. |
| Climb from 3,280 ft. to 6,550 ft. (1,260 ft. to 2,000 m.) | 5 sec. |

Gelling (without altitude control) 18,000 ft.
Flight consumption (without gas consumption) 480 lb./hr./sec.
Oil consumption 100 lb./hr./sec.

An American crew is preparing to repeat the record that four planes of this type are ready to take off from Germany and make non-stop flight attempts to the United States. Edzard and Ristits will pilot the "Bremen," the plane in which they took the endurance record and Friedlach, Loos and Kreis Kothe will make the attempt in another Junkers which has been named the "Bremen."

Federal Licenses Granted to 289 Pilots

THREE-hundred Federal licenses to pilot planes have been issued by the Department of Commerce. The job is headed by William F. MacCracken, Jr., assistant secretary of com-



Front-side view of the newly-issued pilot's license to Secretary MacCracken, Jr., Helmut J. MacCracken, Jr., whose photographs and signatures are on the reverse side.

PHOTOGRAPH BY ROBERT M. STONE

PHOTOGRAPH BY ROBERT M. STONE

reverse side view of the newly-issued pilot's license to Secretary MacCracken, Jr., Helmut J. MacCracken, Jr., whose photographs and signatures are on the reverse side.

PHOTOGRAPH BY ROBERT M. STONE

PRACTICE WHAT YOU PREACH — USE THE AIR MAIL

Air Mail Facts and Figures

Service Shows Notable Monthly Increase

THE TREMENDOUS success of the operation of twelve contract air mail routes throughout the United States during the months of May, June and July, 1937, in comparison to the same period of 1936, is shown in the table made public recently by Postmaster General Frank J. Walker. These figures show that for the month of June there were 443,385 lbs. of mail carried on these routes, for which the contractors received \$105,738.10. For the month of June there were 383,000 lbs. of mail carried, for which the contractors received \$109,200.11, while for July they were 443,385 lbs. of mail carried and contractors received \$105,738.10. The amount of mail handled was less for July than for June. These figures last 35 business days in the months of July as opposed to 26 for the month of June, which accounts for the apparent falling off in postal business.

For the month of July, 1937, there were 18 routes in the United States that handled over 1,000 lbs. of mail matter, while for the month of June there were 16 routes handled exceeding more than 1,000 lbs. of mail matter carried by the contractors last month.

Comparative Statement of Contract Air Mail Routes in operation during May, June and July, 1937.

| Route number, terminal and name of Contractor | Term of Contract | MAY | JUNE | | JULY | | | |
|---|------------------|--------|----------|--------|----------|-------|--------|----------|
| | | | Days | Flows | Per cent | Days | | |
| CAN 1 Boston, Mass. New York, N. Y. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 8,337.18 |
| CAN 2 Chicago, Ill., Detroit, Mich. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 3 Boston, Mass. Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 4 Chicago, Ill., Toledo, Ohio | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 5 Boston, Mass. Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 6 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 7 Newark, N. J., Philadelphia, Pa. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 8 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 9 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 10 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 11 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 12 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 13 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 14 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 15 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 16 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 17 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 18 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 19 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 20 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 21 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 22 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 23 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 24 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 25 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 26 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 27 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 28 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 29 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 30 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 31 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 32 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 33 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 34 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 35 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 36 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 37 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 38 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 39 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 40 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 41 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 42 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 43 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 44 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 45 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 46 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 47 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 48 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 49 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 50 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 51 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 52 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 53 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 54 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 55 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 56 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 57 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 58 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 59 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 60 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 61 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 62 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 63 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 64 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 65 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 66 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 67 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 68 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 69 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 70 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 71 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 72 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 73 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 74 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 75 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | 1.01% | 2,032 | 30,508 | 7,654.17 |
| CAN 76 Newark, N. J., Newark, N. J. | 1,050 | 30,508 | 4,770.14 | 30,616 | | | | |

The Lockheed "Vega" Commercial Plane

High Lift Wing Monoplane With Monocoque Fuselage, No External Bracing and Powered With a Single Wright Whirlwind Engine

BY REFINEMENTS in design without radical departure from species or standards of engineering, the engineers of the Lockheed Aircraft Co., of Los Angeles, have produced a plane that has performed well in a number of commercial contests. At last pieces of the secrets of its unusual success are披露ed. Upon an excellently strengthened monocoque fuselage is mounted an externally braced wing. The tail surfaces are of the high plan and strutless type. The tail surfaces are also of high plan and strutless construction, giving a plane with a minimum of parasitic resistance. The Lockheed "Vega" has won the trophy in the Daily Derby. This plane, which normally carries six passengers and pilot, was equipped for that long flight, to every vital point and navigator. It was this same plane, the "Whirling Eagle," powered by a Wright Whirlwind engine that broke a record for passenger mail. After three passengers were carried in the first leg of the trip by bus, it was flown from Oakland, to Los Angeles, Calif., in three hours and five minutes. On its trip north the plane covered the 460 odd miles in three hours and twenty-five minutes with a pay load of 1500 lb.

A monocoque fuselage is an American commercial plane as yet seldom seen. It is right to say that it is not yet a household name. Many commercial aircraft today carry less than one-third as much in racing planes. Perhaps the greatest objection to this type of structure for commercial work is the excessive cost. But had a monocoque fuselage in the executive field, as it requires fitting and gluing each strip over the form on which the fuselage is built.

In a press conference, presented by Melvin Longhead, inventor of the Lockheed hydraulic brake, the fuselage is built up in sections and glued together as a sort of a large automobile mold under a pressure of 150 tons. The result is a surface homogeneous shell having a high strength weight ratio and a life, with the proper care, potentially unexcelled by any. Each of the sections, which are built in a separate mold, is attached to a framework of wire which holds the primary members in place. By means of these shells together a strain tube, tensioned at both ends, results. Harsher maps are used at points of concentrated loading, such as the engine mount, wing mount, leading gear attachment, and tail. These heavier maps tend to shorten the life of the aircraft but do not detract from its high speed throughout the serviceable period.

Both ends of the shell, that is the nose and tail of the plane, are finished with strakes to complete the streamline struc-

ture. The strakes at the nose form part of the engine cowling. This section of the plane, enclosing the engine, is built entirely of metal; a steel tube mount being used to carry the Wright Whirlwind engine. Counterbalanced, and sealed against the engine, is the propeller, the cowling, which is easily removable for inspection or repair.

The full reinforced wing is built in both plan and strutless systems. It is built up of two spans apart of the high type and radii of greater construction with spruce top strips and spruce plywood webs. From these two spans, which are the outer wings, extend the struts which are balanced by the A/S/L or A/S in all directions. These outer struts discharge down to the beams at four points around the center of gravity. The main wings are provided with open for heating either the wing or plane. The wing has been tested in 14,000 ft. wind tunnel tests.

The tail wing is covered with 3/32 in. spruce plywood. The covering, which adds so greatly to the strength of the structure, does away with the necessity of permanent restraining. The main objection to this type of structure is the weight, though the manufacturers claim that it compares favorably with that of the conventional wood and fabric type.

A Detachable Landing Gear

The same type of rigid physical construction is used for the control surfaces. The ailerons are attached to the wing through their entire length by a continuous dovetail joint. All movable control surfaces are carefully designed to reduce the drag between them and the air stream. The rudder is a monocoque shell having a 20 in. span of two skins meeting in transverse fold. The tail of the stabilizer is stiffened in flight. All controls are balanced and operate by cables that run over pulleys and are anchored under the floor. Inspection or repair is facilitated by having non-breakable glass windows.

2. The landing gear is a single unit which is detachable by pulling a lever on the cockpit. Steering operation is had on 30 in. by 5 in. spoked wheels though larger wheels may be substituted for use on soft fields. The landing gear is of very great strength being of the divided type with one strut extending to the rear, a "V" strut, and a vertical strut, each carrying a shock absorber. Two sets of tires are used, one set of steel tires and one set of soft tires. The latter are used for the landing gear. The aileron struts are fitted with a hardened steel sleeve, cushion spring and



Rear view of the Lockheed "Vega" monoplane. Note the excellent vision lining of the tail members and the fuselage.

postulated with a swiveling device to prevent rebound. The tire is reversible after one end becomes worn.

Inside the frame of the wheels, so as to reduce the drag and the Lockheed hydraulic break. These brakes, which operate on all four wheels, are balanced so that the braking action is one side and proportionately decreases it on the other when operated with the brakes on. When desired both brakes may be locked at one time.

Fuel is carried in two 50 gal tanks between the wing busses and the fuselage giving a range of 500 miles to the engine. The tanks, which are balanced with drain valves, prevent a running range of over 2000 m. The normal mileage is 50 gal, giving a range of approximately 500 m.

The pilot's cockpit, built in front of the wing, offers excellent vision as well as ample protection to the pilot in case of an emergency. The cockpit may be closed in by a sliding door or an open cockpit. The cockpit is intended to fit passengers' cabin which is unobstructed due to this particular type of fuselage construction. It provides for four passengers and luggage or six passengers without baggage. This passenger cabin has a volume of 130 cu. ft. giving ample space for mercantile cargo with seats removed.

Following are the manufacturers' specifications for the Vega:

| | |
|-----------------|-----------------|
| Wing area | ... 350 sq. ft. |
| Span | ... 41 ft. |
| Length | ... 27.8 ft. |
| Height, empty | ... 8.5 ft. |
| Normal pay load | ... 1600 lb. |
| Gross weight | ... 3300 lb. |
| Radius | ... 500 miles |
| High speed | ... 150 mph |

Cruising speed 100 mph
Landing speed 40 mph
Climb at no load 1000 ft/min.
Gauge consumption at cruising speed 10 mi per gal.

The manufacturer states the above performance figures were made from actual flight tests and are guaranteed to within plus or minus 5 per cent.

Program Arranged for Air Mail Conference

According to an announcement made recently by Postmaster General New, a definite program utilizing airplane postmen will be adopted in the near future. The Post Office Department has been mapped out and will be presented to the Air Mail Conference called by the International Bureau of the Universal Postal Union when it convenes at The Hague on Sept. 1.

Address will be represented at the conference by W. T. Young, director, assistant postmaster general, and R. E. Rogers, who is representative of Foreign Mail of the Post Office Department.

The United States will advocate, among other things, uniform postage and express rates and transportation charges with all countries having air mail service, the transit rates to be based on a routing system using units of one thousand miles.

Useful code lists as airmail are to be made popular and dependable trips across the ocean will be given share-and-tell-and-stop lectures service based on the service now in operation in the United States out of Seattle and New Orleans.



Front quarter view of the Lockheed "Vega" monoplane entered in the Daily Derby.

PRACTICE WHAT YOU PREACH — USE THE AIR MAIL.



Photograph of the wing strength test at the Lockheed factory at Hollywood, Calif. The total weight of the wing was 14,000 lb.

NATIONAL AIR RACES, SPOKANE, WASH., SEPT. 23, 24

Descriptions of the Dole Derby Planes

Cont. from page 627

Martin Jensen's "Albatross" qualifying only a few minutes earlier, in contrast, was equipped with the flying control surfaces, tailplane, rudder, fin, stabilizer, and elevators all built of aluminum. Both wings were covered in half-tight skin construction. All control surfaces are of welded tubular steel construction. They are similar to the plan in the Vought Gambrel Air Mail Bombs S.A.

The fuselage is framed with light tubular steel and skin frames at top and bottom, spruce strips at the sides; this was heavily braced. The engine is mounted in front of the fuselage, the propeller is mounted on the side, well behind the engine, so that the propeller does not at any angle will shear a continuous structure even when driven without propeller转动.

The fuselage is placed a foot higher than is usual in smaller craft and the stabilizer is nearly two feet higher. The object of this is to remove the stabilizer from the propeller blast, thus reducing the tendency of the aircraft to roll over and keep the plane in balance. This design with the fuselage adds considerably to the anticipated speed of the craft. It has been stated that Major Irving's entry in the Dole flight was timed at 150 m.p.h. during a short test.

The pilot's seat is mounted on a sliding steel frame and set at about 10° to the horizontal; the position being changeable in flight.

The fuselage is taking in glass monobutane steel. After construction, the interior of the fuselage was met proofed by filling with benzene oil at high temperature through breather holes provided for that purpose. When the plane was built, benzene gas was released, causing the fuselage to burst. When this happened, the pressure gas was taken off the fuselage. The smaller tanks is inserted into the larger to expand the adjacent burst point. Thus of stress and tension have entirely no hold existence of the fuselage.

Even heavy gauges are used at 100 psi gauge, each as the other wings of the flying controls are made of steel.

Locally made gauges are used at 100 psi gauge, each as the other wings of the flying controls are made of steel.

Wing struts are of sheet metal, formed and riveted to a streamline and solid base, riveted and riveted to a streamline and solid base.

Wings are of wood, with welded steel fittings for chord, dihedral, etc., which latter are controlled by push-pull rods worked through bell cranks by cables. Bits are built up of spruce, sheathed in all parts, with spruce internal stiffener, glued, braced and painted with phenolic. Spruce wings have now been tested to a bending point of 1000 lbs.

The engine is a 100 h.p. Pratt & Whitney with the weight increased with steel cable. The construction is very stiff. Even the application of the natural broach wings fitted at

disgously appears points showed no distortion whatever. The wing is also exceptionally light, weighing but 130 lb. complete except for the motor.

The engine is mounted in a surface with steel plates, over which the fabric is drawn.

In Irving's plane, the added gasoline tanks are two in number and placed one an other side of the fuselage, braced and tightly drawn to the plane. In Jensen's plane, the tanks are four in number. Each tank holds 100 gallons of gasoline, and each tank is of the same size. The two tanks take every 96 gal. each and the remainder is to the added tanks.

Instruments carried include north indicator compass, inclinometer, of temperature gauge, altimeter, turn and bank indicator, fuel gauge, air speed indicator.

The Seaford masterpiece, "Dole Spirit" is an extremely low-wing monoplane with a welded steel tube fuselage and



The International entries "Taste of Los Angeles" which was entered in the race under the name of the taste of the last day wooden wings. The wings are built up of lacquered and wood pulp reinforced fabric. The fabric wings are extremely light and could be folded in a few feet. It is said that they give considerable extra lift.

The plane is entered for the \$10,000 International prize for a flight from Seattle to Honolulu. It was completed to receive a top of honor merit. As it is now, it is to be used after the race for the Dole flight. It is to be sold and continues from Honolulu to the Chinese port but may return to Seattle and re-enter in the race for the International award.

Major Ernest had planned to accompany her but he became ill and sat in his cockpit but the experienced aviator piloted her out in safety at 200 ft. of altitude. She was the first woman to fly solo across the Pacific Ocean. She is the wife of George E. Irvin, a resident of Maywood, a suburb of Hollywood. It is a H. K. Kunkel, a resident of Maywood, a suburb of

Hollywood.

The specifications for the Seaford monoplane include:

48 lb. chisel, 7 ft. 6 in. wing area, 100 sq. ft. weight, 27



The Transocean Tadpole low-wing monoplane which crashed during a test flight.

PRACTICE WHAT YOU PREACH — USE THE AIR MAIL

6 ft. 6 in. fuselage, height, 8 ft. 8 in.; with 4 B. 1000 cu. in. weight, loaded, 5,600 lb., gasoline capacity, 400 gal., in seven tanks—two in the wing, one in the seat and two on each side of the fuselage. The engine is a Wright 740, 200 h.p., with a starting motor, 160 lb. 200 cu. in.; landing speed, 50 m.p.h.; take-off, 120 sec. (no distance figures available, pending tests); no radio; earth indicator incomplete.

One of the few low-wing monoplanes ever built in this country was constructed by the Pacific Aircraft Co. of Berkeley, Calif., for the purpose of the Dole flight. It is a two-seater with a closed cabin and sets the wing at the bottom of the fuselage supported by struts situated in the top of the fuselage above the cockpit. Great success was had in the building of the plane as it was originally intended for use in a non-stop flight to Japan. The power plant is a Wright Whirlwind.

It is unfortunate that this plane met with disaster before the start of the race. During tests at San Diego it showed remarkable buoyancy. Harry Thompson and Zebedee, test pilot, arrived at North Island, the San Diego Naval Air Station, the plane glided so far that the Ensigns started over the long distance to the base. The lower surface of the wing and the top of the fuselage were completely submerged in the water. It is claimed that this permitted the plane to glide long distances and prevent a safe landing at sea, only the two which located 12 ft. apart offering any landings.

The monoplane had a 6 ft. 6 in. span, a seven ft. 6 in. chord and measured 29 ft. overall. It was built in record time. The engine is a Wright Whirlwind, 200 h.p., with a starting motor, the gasoline capacity amount of 400 gal. They were situated in the rear between the cockpit and the engine. At the take-off of the Seaford flight, it was planned to have 500 gal. in the tanks, with wing tanks sealed and empty to serve as pontoons in case of a forced sea landing.

Four Day Postponement of the Dole Derby

Agreement among the nine entrants on the ground at Oakland Airport, Calif., late Thursday, Aug. 11, resulted in a voluntary postponement of the start of the Dole Derby to Hawaii for prizes totaling \$50,000. The flight was put off until noon of the following Tuesday, Aug. 16, and the entrants agreed that the present group of contestants will remain in the field for the duration of the race or until the arrival of the next group.

This brief postponement followed the suggestion made by general officials to postpone a delay of one week in the start of the flight. Maj. Clarence M. Young, of the Department of Commerce, Maj. W. H. Gage, chief corps area air officer, Lt. Col. L. B. Wyeth, U.S.A.F., commanding general, and Capt. C. E. Irvin, commanding officer of the 19th Pursuit Squadron, National Air Races Association, that it would be advisable so the entrants might make more comfortable preparation for the flight.

The Honolulu chapter decided to change the original plan of the flight. It was decided upon that the Jan. 12, 1938, date would be given, however, since the date cited had been the Oakland Chapter National Air Races Association, and officials in Oakland in enforcing the rules requiring that all planes be properly equipped and all entrants capable of vertices be accompanied by them.

On Aug. 11, the flight was to be delayed until Aug. 16, as planned probably only because the weather would have been ready to start. That was Lieutenant Norman Odeberg, of San Diego, and Jack Frost, of San Francisco.

A third plane might have been got ready in time to start, as it lacked only equipment of one competitor. This was the Hermon monoplane owned by Major Lawrence Irving, Brigadier, G.C.F. This plane was qualified an hour or two after the selected time for starting the race.

A fourth plane, the "Chichibana," a Transocean monoplane piloted by Bennett Griffin of Oklahoma City, was qualified a little earlier.

A portion of the agreement reached among the entrants altered the starting order somewhat. It provided for the fliers to leave in the order in which they qualify, but as

On Airways Tour



G. E. Moody vice-president of manager of operations for Western Air Express, Inc., and William H. Hayes of the Los Angeles Chamber of Commerce, are shown here on their tour of the West Coast. They are currently on an air tour of American commercial airmen. This tour is sponsored by radio stations and organizations of more than 1200 stations throughout the country. The purpose of the tour is to show our services are here, while Mr. Moody will direct a series of air transportation developments.

Odlin passed the tests before the starting line he retained and original position as Number One down the racing. This was due to the fact that he had the best record to go for voluntarily delaying his start and allowing the competitors that a position shared for the position.

Lt. MacCormack, personal representative of Odlin in Oakland, said he could see no objection to the postponement. With one or two exceptions, the fliers and others known in the racing circles agreed that the postponement would be a wise move, particularly in view of the present condition of the aircraft.

They also said it would permit the pilots and navigators to rest before taking off, which could not have been done by many of them had the take-off time been retained as originally fixed.

As the spokesman stated, those failing to qualify by 24 hours prior to the new starting hour will not be eligible for the competition.

An American goes to great pains, with their pilots and navigators are awaiting the word to speed down the runway at Oakland Airport and take off for Hawaii, 2400 miles away. The fliers will sleep between take-offs. The following is the starting order in the new schedule:

1. The monoplane Oakland, piloted by Bennett Griffin, Lt. Howey, navigator.

2. Nansen Gaddis, San Diego, pilot of the monoplane H. Hansen, with Louis E. G. Horwitz, San Diego, the navigator's mate.

3. Longines C. Irvin, war ace, flying alone in a Boeing monoplane.

4. Jack Frost, piloting the San Francisco Examiner's Gullwing, navigator by Gordon Scott of Santa Monica.

5. Capt. Angie Rutherford, Detroit, pilot, Louis V. R. Krupa, San Diego, navigator, flying Miller, Davis, twenty-two year old, in a Boeing monoplane.

6. Charles W. Parkhurst Air Corp., backed by the citizens of Fresno, Calif., and navigator by Ralph C. Lewis, Jr., Fresno, Calif. The plane is the smallest in the race.

7. Martin Jensen, twenty-one-year-old pilot from the Hawaiian Islands, carrying Fred Schubert, master mariner, in the navigator's seat. They will be a new Boeing monoplane pilot and navigator, estimated to have 1000 h.p.

8. Arthur Odeberg, San Diego, pilot, flying a monoplane navigated by Louis W. Clegg, San Francisco.

9. Capt. William Irvin, piloting the Dallas Spirit, navigated by S. H. Radcliffe.

PICTURES IN THE NEWS



ABOVE: The well-known game of African gold as it is played on a Los Angeles, Calif., aerodrome. From the photo it will be noted that some lucky pilot has "sheeted" a score.



LOWER LEFT: A perfect formation of British two-seaters passing over the stands at the recent Royal Air Force Display held at Hendon Aerodrome, Eng. Ind.

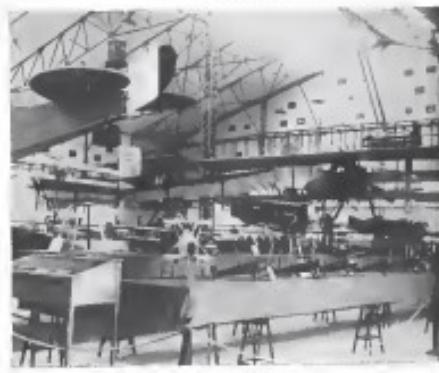
BETWEEN: A long focus photograph of our paratroop jumpers getting off simultaneously from three English bombers as they pass over Hendon Aerodrome, England, during the recent R.A.F. Display.



ABOVE: The U.S. Army dirigible R-3, coming to earth at Bolling Field during its recent trip through the East. The craft was commanded by Maj. Gen. John A. MacPhee and carried a crew of 38 officers and enlisted men.



BETWEEN: An interior view of a section of French aviation aircraft located in an old hanger near Meulan, between Paris and Versailles. The nearest addition is the crosscarriage dropped by the lower struts. Stegmann and Gob.



Aircraft Trade Notes

New Types of Goggles

Stevens & Haughey, popular manufacturers of Boudoirs, New York, have developed a new type of goggles designed to keep pace with improvements in aviation, increased spans, and applied refinements to previous designs.

The new goggles are—R.A.V., goggles under brand name, in a bimini-type and although but a few weeks old, are in use at aviation fields as far away as Japan, Australia and India.

Another new development in the Commander type, a recent refinement including the experience of Naval aviators in the precise requirements of Naval engineers and laboratory officials. The goggles are made of clear, light weight, non-transparent glass ground and polished to a definite curve. The vision afforded is claimed to be complete. The range is estimated to be不相信 in every direction. The ventilation is by a French system, invented in 1915 by a leading French pilot in collaboration with Mr. Raoult. The face pad is an automatic mask of flexible rubber and firmly attached to the frame.

The automatic lens in Commander goggles, is also supplied in non-transparent Boudoir, having same weight, thickness and absolutely the identical optical process.

There is another type of metal frame with curved, heat, optically ground or Boudoir optically ground lenses.

General O'Ryan Announces New Directors

General John F. O'Ryan, president of Colonial Air Transport, Inc., has been operating the New York Boston service road since July 1, 1926, announced recently at the conclusion of a special meeting of the Board of Directors at Newark, N. J. Hon. H. C. Harlan, Senator James W. Wasserbury and General J. Leslie Macaulay, vice-president of the Hotel Jacuzzi, New York City, and president of the American Hotel Corp., had been elected to membership on the company's board.

At the meeting of Colonial Airways, Inc., following the other members of the Board of Directors, General O'Ryan was elected to membership on the Board. Senator Wasserbury having been elected at the last meeting.

At these meetings plans were completed for the operation of the Albany-Cleveland air mail route, contract for which was awarded to Colonial Airways. Although a short time ago

The de Havilland Broadside Starter

A new type of broadside starter has been developed by the de Havilland Aircraft Co. Ltd., Stag Lane Aerodrome, Edgware, Middlesex, England. This starter is a development of the earlier "bend on" type. It is much safer than the earlier type in that the risk of the mainshaft running into the rotating propeller of the engine is entirely eliminated. The propeller is held stationary. In the earlier model there was always the risk that instead of being reversed away from the propeller, the starter might accidentally be thrown forward into the propeller.

Since the broadside starter can only be run at low aircraft speeds with difficulty, it is necessary to increase every time the aircraft takes to the air, its weight, consumption and excessive vibration. It is claimed that the broadside starter can start the engine of a biplane in less than a third of the time taken by the older models. The de Havilland starter is guaranteed to start any new engine up to 200 h.p. from cold (without any flying whatever) in 30 sec., and a few weeks.

with no more motion than is required to start a standard motorcar engine. The propeller is mounted on a Ford transmission shaft which is so machined that its engine provides the power to turn the propeller.

The starting mechanism of three starters includes a "Silent" belt, a driving shaft, and a clutch. The drive-shaft



is mounted on a Ford car chassis of the engine of the airplane. The driving shaft is adjustable both vertically and horizontally and is mounted at right angles to the direct line of the chassis as a torque converter. The shaft is driven by means of a clutch at the rear end of the shaft. The clutch is used for the purpose of starting the engine. The clutch is arranged to start and subsequently engage a tension spring and engage with the drive-shaft on the propeller side. The clutch is so arranged as to disengage automatically from the slow when the speed of the propeller exceeds that of the driving shaft.

The overdrive drive and back side drive are controlled primarily by the clutch and the primary source of the power (the propeller) by disconnecting or lifting this lever, which extracts a double disc-clutch inserted in the transmission case, the engine engaging either the lower shaft wheel of the overhead gear or the back side, as required. By using the ordinary forward or reverse gears of the gearbox the starter can be used with either clockwise or anti-clockwise engine.

E. A. Sperry to Serve on A.S.M.E. Committee

Elmer A. Sperry, president of the Sperry Gyroscope Co., Brooklyn, N. Y., has been appointed by Charles M. Howell, president of the American Society of Mechanical Engineers to serve on the Executive Committee of the Aerospace Division. He succeeded George E. Gould, Jr., president of Pratt & Whitney Aircraft Co., Hartford, Conn., who has resigned.

A. C. Falk Joins G. S. Ireland, Inc.

A. C. Falk has joined the engineering staff of G. S. Ireland, Inc., of Charles City, Ia. E. L. Y.

The field engineer is a graduate as aeronautical engineer at the Wright Whirlwind Company. The first of a series of meetings will be held in San Diego in a few weeks.

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GENERAL AIR MAIL SERVICE
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Sperry,
I am sending you my best regards.
I hope you will accept my hearty
thanks for your work in helping me
to get the job I wanted. I am very
pleased to have you on our team.
I am sending you my hearty
thanks for your work.
Yours sincerely,
Charles A. Lindbergh

Lindbergh Said:
"As a member of the B-2 had
what I expected and did not
have to do any extra work to make
a flight from New York to Paris."
Quoted in a press
newspaper of May 1st, 1928, in
New York Times.

B-2
BROUHAM
(TYPE PLANE)

This same model that
Lindbergh flew—designed
to pass over Europe.
With White Wings and 200
H.P. Hispano Suiza
Engines Sealed

B. F. MAHONEY AIRCRAFT CORPORATION

Owners of Ryan Airline, Inc.

San Diego, California

Lindbergh Field, San Diego, Cal.

Lindbergh Field will be located at the north end of San Diego. The location is about 1½ miles from Forest Hill, a residential section of San Diego, and about 1½ miles from the Mexican border. The area for land plane aeronautics, 287 acres, of which 165 acres are located on the aeronautical property and 122 acres are held owned by the aeronautics corps. The land area provides a landing circle 3,000 ft in diameter.



Lindbergh Field, San Diego, Cal., is to be held when completed.

There will be a takeoff space of 4,250 ft across the narrow base presently given. Total distance is in the direction of prevailing winds, 7,500 ft, for direct landing and taking off of planes. Near the base it is based for the use of seaplanes will be provided. This will be 13,000 ft by 3,400 ft, and will

be dredged to a uniform depth of 4 ft. A front of 200 acres, at the southern part of these flying areas has been reserved for the servicing and maintaining of planes.

The field is mostly rugged, from San Diego, being on three highways. The main line of the Santa Fe Railroad is within 1,000 ft of the proposed port and street car line has service nearby.

Buffalo, N. Y.

By Rollie J. Fossoko

Moth interest has been shown in the little Da Havelock Moth owned by Leslie Tivis, manufacturer of motor aircraft. The Moth is a single-seater, built entirely of English spruce in a monoplane and is English, constituting a new factory for the manufacture of his machine. While abroad, Mr. Tivis bought the Moth and flew it back and forth across the English Channel several times.

The R.S.L. an Army unsanctioned analog, on a test trip, landed on a steeply banked hill and, after the disengagement of the propeller and the load gathered at the field to tie the big ship, it did not attempt to land, as had been expected, due to the non-existent condition of the long legs. Colored Flagg, who was so concerned, circled over the field several times, dropped a request to visit the Ford Airport where his cousin was stationed while he was there.

Commissioner Moore has passed on to the City Council the necessity of a necessary start and budget for lighter-than-air ships, and has asked authority to have plans drawn up immediately, to submit to Washington for official approval.

Booklet on Buffalo Airport

An excellent descriptive booklet on the Buffalo Airport has just been issued by the Buffalo Chamber of Commerce. This confirms the project from its inception, eight years ago, to its completion in April, 1927. The history of the procurement of the plot, a description of its construction, equipment, etc.



Floodlight Your Airport

A well-constructed airport is more than a country — it is a preparation for the pleasure of the flying and cargo.

By the use of a recently designed improved BST low height pole and antenna, you can provide the new Hamilton Floodlights, designed to serve your airport with a minimum of light in every corner of the landing field.

We will gladly give you additional information on the Model "A" Floodlight. HAMILTON 49-595 WFG CO., 19 Korte Avenue, Milwaukee, Wisconsin.

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generation and costs of supplies and storage space to mailing points are given.

A section is devoted to notable events which have taken place in the field of aviation, and a complete list of costs of building the port are included. The booklet contains a blueprint showing the layout of the field, hangars and other features.

Winston-Salem, N. C.

By Rollie J. Fossoko

Within the next few weeks, Winston-Salem will be able to receive postals from the East and northern Memphis express. They will be able to do this because of the completion of the Memphis to Col. Charles Lindbergh about the middle of October, and it is reported that the mail will still dominate the field.

Panhandle County, of which Winston-Salem is the county seat, has the size of 1,100 square miles, and a land area of 1,000 square miles, and the River, the Yadkin. The field will be a four-way affair and government engineers and others who have looked over the site and development plan believe it gives promise of fulfilling the mission of a modern field. Its agents have been secured and a lighting system is being installed, for night flying. The field is less than one mile from the city, and may be reached from the center of town in a dry-weather flight.

Interest in aviation in this section has been enhanced by the announcement that Winston-Salem has been selected as one of the three centers from which Reynolds Airways, Inc., one of the largest non-subsidized aviation companies, will conduct its flying program. The other two centers are the cities of Atlanta, Ga., and St. Louis, Mo. Alexander J. Reynolds, head of the company, who succeeds an office here in addition to the one in New York City.

The first public demonstration of "The Voice From the Star," a broadcasting device from airplanes, was made at

Winston-Salem a few weeks ago. Mr. Reynolds accompanying a party here is one of his tri-engine planes which has been used in the past in the search for missing fliers in various states, including Washington before Army and Navy officials.

Aviation is the principal theme of interest to Winston-Salem and surrounding sections at this time and the future holds much promise.

Kennekut Batavia Airport

The Kennekut Batavia Airport is situated one mile east by north from the city of Batavia, N. Y., and lies exactly on the compass course from Rochester to Buffalo. The field is marked with the standard 16 ft. wide and with 35 ft. intervals, the tops of which are covered with white sand, and the entire surface is covered with a thin layer of fine sand. There are two 1,000 ft. runways and the only obstructions within a half mile are the 25 ft. telephone lines on the east; the wind tunnel is placed on a 30 ft. rise on the north-east corner. The wind tunnel is built of a rigid frame, 10 ft. high, 10 ft. deep, 10 ft. to array bar, when given a steady breeze. The field has been ruled with eight iron tees about 10 ft. apart and is in excellent condition.

Newark Airport, Maynard, Mass.

G. D. Davis, the chief pilot of the Northern Airplane, private owner of Tracy City, with a West 160 recently set his record altitude flying from Newark to the New York State line to the point of his arrival. He will demonstrate the plane on the Minnesota Territory. A flying class is being taught at the airport and instruction will start about Oct. 1.

Armenak Field, White Plains, N. Y.

Armenak Field has passed to the status of Barrett Aeroway, Inc. Its new owners plan to erect fifteen hangars and operate a commercial flying service. Operations will start shortly.

**Every Flier should read
Captain Barber's
unique books
on AVIATION**



The Aeroplane Speaks

By HORATIO BAERER, F.R.A.M.I.A.E.

This work, adopted by the United States Government for use in the instruction of its aviators, is a simple, straightforward yet accurate handbook on elementary aerodynamics, flying mechanics, engines, propellers, and related subjects, including flying, navigation, and maintenance. Professor Alexander Kluyver, of the Groton School of Aeronautics, New York University, says: "It is a classic, a work of pioneer in all directions. Every pilot should read it." Richly illustrated. \$1.00

Aerobatics By HORATIO BAERER.

This work, as its title indicates, is the author's most strenuous offering — a dual purpose book, valuable alike to student and expert. Major W. G. Edgell, an active executive officer of the A.C.A.C., states: "I have never seen a book that can be recommended to students or experts in aerobatics to the extent in order to strengthen and perfect their work in aerial acrobatics." Richly illustrated. \$1.00

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PUBLISHER'S NEWS LETTER

In the statistical summary of the needs of the last three years' air mail traffic it is evident a great deal of the greatest importance for air transport programs. It may now be definitely asserted that certain mail and goods by air can be commercial—that is, make not only expenses but profits. Accomplishing this in air mail is a great triumph for the new policy of transacting the mail and goods revenue to contract operators, but it also makes a great map forward in airmail expansion. Up until comparatively recently there have been difficulties to whether or not airmail could be made profitable to private contractors. But even within the first year this fact has been demonstrated.

While, as yet, it is too early to determine positive and accurate rates for depreciation and obsolescence, the allowances being made for these items will probably be found to be high and conservative. The costs of operations are increasing so rapidly that the profits made by the contracting air mail companies may be gauged by two factors. One, in response to the system of an overhauled and the other the rate at which the Post Office Department has been compelled to increase. Generally speaking, the costs of operating systems of every kind will tend to increase again from forty to fifty cents a mile. If the air mail traffic requires exceed this, then the company will be paying its operating expenses. Whatever is received above this will enter the profit making side dependent on the way each with the management has been exercised or centralized charges. Seller expenses, taxes, will have to be taken care of before the profits come in.

The promotion stage, may to a large extent, be passed over in silence. It is not necessary to go into the early stage that practically every air mail contractor is inciting his operating expense while several are definitely making profits. This result of the first year of operation will have a profound effect on the rates at air transportation both land and abroad.

In the United States it will create a demand from all parts of the country for air mail service. This will mean the establishing of new air mail postage routes linking up the principal centers. The encouraging decisions made by the first air mail contractors will attract lower bids for the

new agent and using holders. The existence of the air routes will create a demand for commercial surplus and passengers. New airports will be required, and will be a means for cities to appropriate large areas for their expansion. More pilots and mechanics will be needed. The public will be more mobile and as soon as the public can use the air mail to all sections of the country, this will make stamp will be used more generally. The more buses that are operated the less will be the motor traffic for the mass market. In summary, the most important change by far and constant route daytime for the last year is the most significant event that has yet occurred in the field of commercial aviation.

Above, the effect of the profitable operation of American as road liner will raise serious questions. If the Germans or others require a subsidy of 25% of their operating charges, and the loss of other countries usually as much, it is going to be a matter for consideration as to whether the American plan of restriction rates at fixed rates is a better plan than the payment of dividends rate, for each kilometer driven. Both plans appear to have distinct advantages. They are both experiments in the same field. In the United States the fixed rate per pound will cause the use of the most efficient small planes for the carrying of mail and freight. In Europe, the passenger service will bring about the development of the large type of transport plane. If they can, within a few years, after the experimental stage is past, develop the ability to travel by air and to capture the larger share of European passengers, as is now being done in the United States and the experience gained here be of possible value abroad. Two assessment laboratory experiments are being made. It is to be hoped that both are successful from a commercial as well as an experimental point of view.

It is now time for everyone to extend congratulations to the companies that have pioneered the air mail contract routes. They will be deserving of every cent of profit that their foresight has earned. They have given to the world a demonstration of American genius for organization and operation.

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Published by Sage Publications India

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FOR SALE: M. E. flying boat, just overhauled with new engine and bottom, with model A Hispano motor. New Orleans Air Line, New Orleans, La.

NEW LIBERTY 18-3000: New and unused Peacock 400 hp. Liberty 18 engine for sale. Price \$1000 plus shipping. Or by wire to Standard Airplane Mfg. Corp., Farmingdale, L. I., N. Y.

LOW WING EAGLEBROOK streamlined and streamlined for National Air Corp. Has all equipment and passed Dept. of Commerce for transport license. New OX5 motor just installed. Price \$1000. Paul E. Bruch, Bruch Bros., Oklahoma City, Okla.

PARACHUTES, new and used for exhibition and emergency drops, rope balloons for stunt men, etc. Supply weight available. 1935 Thespian Bros., Bellwood, Ill., Chicago, Ill.

B. H. MOTIVE—**FOR SALE**: Two motor, folding wings, rubber-cord pressurized landing gear, with 80 hp. Glenside Air-Cooled Motor. The State has a new one in the works. Located in Englewood, N. J. For further information, contact: B. H. Motive, c/o Mr. E. B. Walker, 1716 Atlantic Ave., Atlantic City, N. J., or Jerry Van Wagner, Curtis Flying Service, Garden City, N. Y.

FOR SALE: OX5 Jenny and Sun-plex LW F. both in excellent condition; both engines like new. J. H. Behrman, Latrobe, Pa.

FOR SALE: Early stock airplane material, parts, OX5's, R-975's, R-1340's, Marmon, Herk, Memphis, etc. For \$100.00 will trade 1935 OX5, frontage, parts, propeller, engine for similar boat. Standard Prop. Belvidere, Ind. Box 146.

FOR SALE: Fuel motor converted for airplane 25 ft. long and complete motor included. \$100. Two 25 ft. wheels and tires \$100. Lawrence Bishop, Sioux City, Iowa.

FOR SALE: New Standard gas-turbine unit, \$1250. F. H. Gist, Grandjean, Iowa.

NEW LAURENCE light weight two cylinder aviation motor complete with ignition, magneto, carburetor, propeller, etc. \$250. Irving Salvage, 1847 East Eighth St., Brooklyn, N. Y. Telephone: Devery 5-8127.

RENTAL due to unfriendly contract: SuperSport, two seater, \$8 Lefferts, unassisted, \$250 week rate. H. G. Ward, Beacon Building, Long Island City, N. Y.

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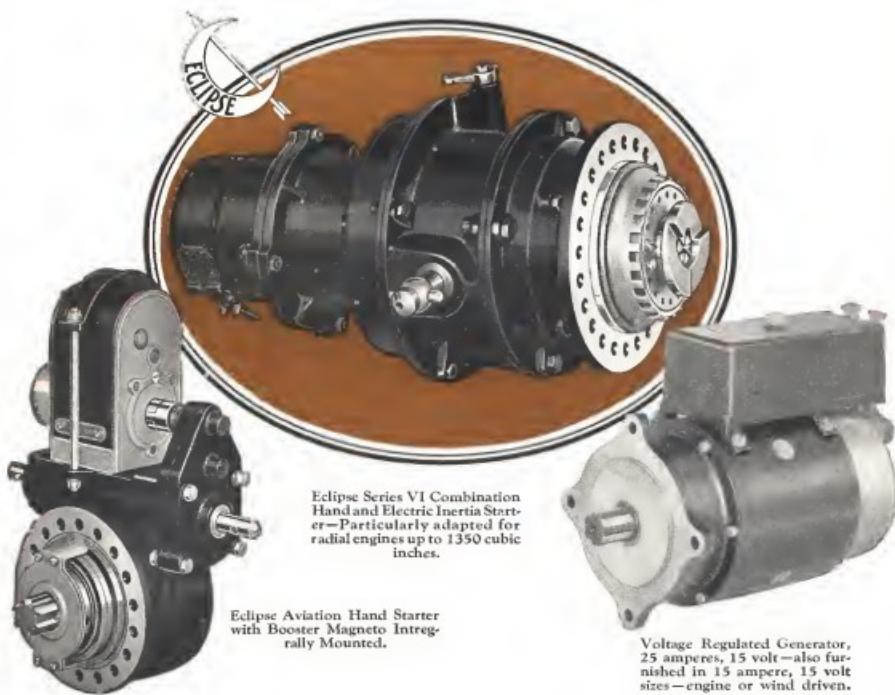
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